

December 2009

Technical Update

Interim Use of the Modified Generic Risk Assessment (MGRA) Spreadsheet Model in Risk Assessments Submitted Under the Record of Site Condition Regulation (O. Reg. 153/04)

The ministry has developed a streamlined risk assessment approach for developing property specific standards for use in a Record of Site Condition. This new approach, referred to as Modified Generic Risk Assessment (MGRA), will be fully implemented with the amended Regulation 153/04 (on July 1, 2011). In the interim, the Ministry will allow the use of the new modified generic spreadsheet model in risk assessments (RAs) submitted under O. Reg. 153/04 provided that they follow existing risk assessment rules and requirements. This Technical Update provides clarification and guidance regarding the use of the model, and suggests tips that are intended to help expedite the review timeline for RAs submitted using the modified generic model. For the purposes of this Technical Update, the spreadsheet model is referred to as the modified generic "approved model".

Amendments to Ontario's Brownfields Regulation (O.Reg. 153/04)

Ontario has amended the Brownfields Regulation O.Reg 153/04 Records of Site Condition, made under the Environmental Protection Act. The regulation is available at [<http://www.e-laws.gov.on.ca/index.html>]. Fact sheets that describe the Regulatory amendments can be found at [<http://www.ebr.gov.on.ca/ERS-WEB-External/>] and address the following topics:

1. Enhanced Record of Site Condition Integrity
2. Streamlined Risk Assessment
3. Strengthened Standards
4. Implementation and Transition
5. Complementary Amendments to Ontario Regulation 153/04

The amended Regulation 153/04 comes into force on July 1, 2011.

What is a Modified Generic Risk Assessment (MGRA)?

The regulatory reform introduces a ministry-approved model and risk assessment requirements for the modified generic risk assessment (Schedule C, Part II, S.7 of O. Reg. 153/04), one of two types of limited scope risk assessments described in the amended O. Reg. 153/04. The

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submission and review process for MGRAs (sometimes called Tier 2 RAs) will come into force on July 1, 2011, along with the rest of the amendments to O. Reg. 153/04.

The MGRA process provides an alternative to meeting generic standards and to the traditional risk assessment process, where appropriate. This streamlined approach is intended to provide a timelier and more cost-effective option for owners involved in remediation activities.

The ministry has also updated standards for approximately 120 chemicals to reflect advances in science. Standards are updated using a new risk assessment model with risk levels set typically at 1 in a million for carcinogens and a hazard quotient of 0.2 for non-carcinogens for each calculated exposure pathway. The new model used in the standards development process has been adapted to allow for a simplified approach to risk assessment (modified generic), which is intended to help expedite the acceptance of RAs. The "approved model" used in a MGRA can yield less stringent property specific standards while ensuring the same target level of protection as is intended by the generic standards.

Using the Modified Generic "Approved Model" before July 1, 2011

For risk assessments received by the Director prior to July 1, 2011, QP_{RA}s may use the modified generic spreadsheet model in RAs submitted under the existing O. Reg. 153/04. During this time, the model can be used in accordance with the RA processes and requirements of the 2004 Regulation. Regulated review timelines will be in accordance with the 2004 Regulation (typically sixteen (16) weeks).

As at present, a Pre-Submission Form (PSF) must be submitted before the risk assessment is submitted for review.

This Technical Update provides clarification and guidance regarding the use of the model, and suggests tips that, if used by the owner and qualified person (QP_{RA}), are intended to help expedite the review timeline for RAs submitted using the modified generic "approved model" until June 30, 2011.

Regardless of whether one or more models or risk assessment approaches are used in a RA report, all RAs must be submitted to the ministry under a single cover. The modified generic model may be used to develop property specific standards (PSS) for either some or all contaminants of concern (COCs). If **all** PSS are developed using the "approved model", and all the tips and recommendations found in this Technical Update are followed, the QP_{RA} is requested to **include the cover letter found in Appendix A**. If PSS are developed for some of the COCs using another approach, a **single**, consolidated RA report is to be submitted to the ministry.

The guidance provided in this Technical Update applies during the period ending June 30, 2011. Upon implementation of the Regulatory reform, Ministry will provide additional guidance on the submission of a modified generic RA.

Using the Modified Generic “Approved Model” after July 1, 2011

It is the Ministry's intention that when the amendments to O. Reg. 153/04 come into force all modified generic RAs will be submitted electronically. The “approved model” would be available online, and inputs and results would be linked directly to the MGRA online submission template. The Pre-Submission Form (PSF) would also be completed online, and submitted at the same time as the RA Report. The two documents would be reviewed by the ministry in parallel. The MGRA process will have a regulated review timeline of eight (8) weeks.

Modified Generic Spreadsheet Model Overview

Interested stakeholders may download the model in spreadsheet format (the “Approved Model”) from the Ontario Ministry of the Environment's Record of Site Condition website (<http://www.ene.gov.on.ca/envision/land/decomm/condition.htm>). A User Guide can be found at the same site. A more comprehensive User Guide for the web-based tool will also be available when the amendments to O. Reg. 153/04 come into force.

QP_{RAS} have the option to use the modified generic spreadsheet model in a RA for the purpose of developing property specific standards (PSS). The ministry recommends that if any model assumption is changed from the ministry's default value, the relevant environmental site assessment work described in Appendix 1 of the Modified Generic User Guide be carried out.

Tips to Expedite the Review Timeline

Tip 1) **Include the cover letter found in Appendix A if all of the following conditions apply (the cover letter will flag the RA for expedited review):**

- a) the modified generic “approved model” is used to develop all PSS; and
- b) the submission process and all tips recommended in this Technical Update are followed.

Note: This applies to both Pre-Submission Forms (PSFs) and Risk Assessments (RAs)

Tip 2) Do not use the modified generic “approved model” to generate PSS for a property where any of the following conditions exist:

- a) the soil at the property has a pH value less than 5 or greater than 9 for surficial soil and/or a pH value of less than 5 or greater than 11 for subsurface soil;
- b) the property is within, or includes or is adjacent to an Area of Natural Significance, or includes land within 30 metres of an Area of Natural Significance;
- c) the QP_{RA} is of the opinion that the property is an environmentally sensitive area.

*Note: the “approved model” **may** be used for shallow soil properties and for properties that include land within 30 metres of a water body, as both are captured in the model*

Tip 3) Do not include any risk management measures (RMMs) apart from those designed by the ministry and included in the modified generic “approved model”

The RMMs designed by the ministry for use in the Tier 2 RA process are:

- a) Three (3) kinds of caps (barrier RMMs):
 - Hard cap
 - Fill cap
 - Shallow soil cap
- b) Three (3) kinds of building controls:
 - No enclosed buildings
 - Storage garage (between the foundation and the residential stories)
 - Ground level non-residential use

Descriptions of the RMMs can be found in the modified generic “approved model” under the spreadsheet tab “RMM Descriptions”.

Tip 4) If the owner or QP_{RA} identifies the potential for contaminants on, in or under the property to cause exceedance of the applicable site condition (generic) standard at the nearest off-site receptor, consider and discuss the following in the PSF submission:

- a) Actions taken or that will be taken to prevent exceedance of the applicable site condition (generic) standard at the nearest off-site receptor
- b) Consultation with affected property owners
- c) Outcome of consultation

Tip 5) Follow the process for submission described below, including the environmental site assessment and RA reporting recommendations

Process for Submission

Step 1) Follow all submission requirements detailed in Schedule C of the Regulation

Step 2) Submit Pre-Submission Form (PSF) to the Ministry

At present, a risk assessment can only be submitted once the owner and the qualified person for risk assessment (QP_{RA}) receive ministry comments on the PSF and the RA approach. In the PSF, the QP_{RA} must indicate which model or approach (including modified generic “approved model”, if appropriate) will be used in the RA to develop one or more PSS. A full Conceptual Site Model (CSM), as described in Schedule C, Section 3, Sub-sections (8) and (9) must be included.

If the QP_{RA} plans to submit a RA that includes PSS developed using more than one model or approach, and desires early comments on the modified generic aspect of the RA, the modified generic component may be submitted along with the PSF. The second draft of the modified generic risk assessment component would be included in the final risk assessment report (preferably as an appendix).

Step 3) Receive Comments on PSF from the Ministry of the Environment

The ministry will provide comments on the PSF. These will include whether or not the site falls within a wider area of abatement (WAA) and requires a WAA RA (22 week Regulatory review timeline). The Tier 2 model can still be used to develop PSS in a WAA RA, if desired.

Step 4) Submit RA to the Ministry

Regardless of whether one or more models or risk assessment approaches are used in a RA report, all RAs must be submitted to the ministry under a single cover. Unless the RA is a WAA RA, the regulated review timeline for the RA continues to be sixteen (16) weeks. The eight (8) week review timeline for a modified generic risk assessment under the regulatory reforms comes into effect on July 1, 2011.

Until July 1, 2011, the current Site Condition Standards ("Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act (March 9, 2004)") must be used when screening for Contaminants of Concern. When filing a RSC up to July 1, 2011 the owner will need to use either the 2004 standards or a PSS developed through a RA.

As at present, mandatory requirements of risk assessment reports, described in Schedule C, Section 4 must be met. The ministry suggests that the additional environmental site assessment and RA reporting recommendations described below also be followed.

Step 6) Receive Notification from the Ministry

Within the regulated review timeline, the Director:

- a) Will notify the property owner of the Director's decision on the RA; and
- b) May issue a Notice of Circumstance to the property owner.

Environmental Site Assessment Recommendations for RAs Submitted using the Modified Generic "Approved Model" before July 1, 2011

While not required under O. Reg. 153/04 until July 1, 2011, the owner and QP_{RA} are advised to follow the recommendations set out in Appendix 1 of the Modified Generic User Guide. In that appendix, recommended minimum requirements are set out for the following categories where default assumptions are to be modified in the risk assessment:

- Soil type
- Fraction of organic carbon (soil and aquifer)
- Distance to closest surface water body
- Minimum depth below grade to the highest water table
- Aquifer horizontal hydraulic conductivity and gradient
- Soil vapour concentrations and depth to soil vapour measurements

In addition, figures for determining the number of frozen ground days based on site location are included in Appendix 4 of the Modified Generic User Guide.

Reporting Recommendations for RAs Submitted using the Modified Generic “Approved Model” before July 1, 2011

All risk assessments submitted to the ministry must meet the reporting requirements detailed in Schedule C of the Regulation. Until June 30, 2011, it is recommended that risk assessments that are submitted to the Ministry under O. Reg. 153/04 and that use the modified generic “approved model” to develop property specific standards also include the following:

1. RA report using the reporting template provided by the ministry [located at: <http://www.ene.gov.on.ca/envision/land/decomm/condition.htm>], and based on Schedule C, Table 1 of the Regulation.
2. Electronic copy of the completed “Tier 2 Input” page (worksheet) of the spreadsheet model (submitted to SDB-Tier2RAReview@ontario.ca).
3. All reporting recommendations relating to Environmental Site Assessment described in Appendix 2 of the Modified Generic User Guide.

Conclusion

Until June 30, 2011, QP_{RAS} may use the modified generic “approved model” in RAs submitted under the existing O. Reg. 153/04. Regardless of whether one or more models or risk assessment approaches are used in a RA report, all RAs must be submitted to the ministry under a single cover. This Technical Update describes ministry recommendations regarding the use of the Tier 2 spreadsheet model in risk assessments during this interim period.

The guidance provided in this Technical Update applies during the period ending June 30, 2011. Prior to implementation of the Regulatory reform on July 1, 2011, the ministry will provide guidance on the submission of a MGRA.

For further information, contact:

Streamlined Risk Assessment Coordinator
Ecological Standards Section
Standards Development Branch
Ministry of the Environment
7th floor, 40 St. Clair Avenue West
Toronto, Ontario, M4V 1M2

SDB-Tier2RAReview@ontario.ca

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Appendix A of the Technical Update entitled:

“Interim Use of the Modified Generic Risk Assessment (MGRA) Spreadsheet Model in Risk Assessments Submitted Under the Record of Site Condition Regulation (O. Reg. 153/04)”

The purpose of this covering letter is to inform the Ministry of the Environment that **ALL** property specific standards developed in the Risk Assessment submitted with this letter have been developed using the Modified Generic “Approved Model”. All of the ministry recommendations and tips provided in the Technical Update referenced above have been followed. Specifically:

- ☐ 1. No model or method other than the ministry's Modified Generic “Approved Model” has been used to develop the risk assessed standards in this RA
- ☐ 2. None of the conditions mentioned in Tip 2 (relating to pH, areas of natural significance, or environmental sensitive areas) exist at the RA site.
- ☐ 3. No risk management measures apart from those designed by the ministry and included in the Modified Generic “Approved Model” were used in the RA (Tip 3).
- Y ☐ 4. If applicable, the following items have been considered and discussed (Tip 4); a)
- N/A ☐ Actions taken or that will be taken to prevent exceedance of the applicable site condition (generic) standard at the nearest off-site receptor; b) Consultation with affected property owners; and c) Outcome of consultation.
- ☐ 5. The required process for submission will be followed (Tip 5).
- ☐ 6. All “Environmental Site Assessment Recommendations for RAs Submitted using the Modified Generic “Approved Model” during the Transition Period” (including Appendices 1 and 4 of the Modified Generic User Guide) have been followed.
- ☐ 7. All “Reporting Recommendations for RAs Submitted using the Modified Generic “Approved Model” before July 1, 2011” have been followed:
- a. MGRA Reporting Template provided by ministry used;
 - b. Electronic copy of completed “Tier 2 Input” page submitted;
 - c. All recommendations described in Appendix 2 of the User Guide met.

Please check all boxes that apply

Submitted by: _____

Qualified Person for Risk Assessment (QP_{RA})

Property ownership: _____

Property location: _____

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